

The invention claimed is:

1. A building comprising:

an exterior wall structure including an exterior sheathing, an interior wall, at least one layer of thermal wall insulation material between the exterior sheathing and the interior wall, the layer of thermal wall insulation material being spaced away from the exterior sheathing to provide a wall air gap between the insulation and exterior sheathing;

a roof structure including a roof deck, an interior ceiling, a layer of thermal roof insulation material between the roof deck and the interior ceiling, the layer of thermal roof insulation material being spaced away from the roof deck to provide a roof air gap between the layer of thermal insulation and the roof deck;

the wall air gap being in fluid communication with the roof air gap;

a roof vent to allow air to flow freely from the roof air gap to an outside space; and

an air ventilation grid located at a lower end of the wall air gap, the air ventilation grid having a plurality of openings that are sufficiently small to prevent insects from entering the wall air gap, but sufficiently large to allow the outside air to freely enter into the wall air gap, whereby air is allowed to freely flow by natural convection upward from the outside through the ventilation grid, upwardly through the wall air gap, upwardly along the roof air gap, and out of the roof vent.

2. The building of claim 1, wherein the thermal wall insulation material includes a layer of rigid foam spaced away from the interior wall and a layer of fibrous insulation material disposed between the rigid foam and the interior wall.

3. The building of claim 1, wherein the sheathing comprises rigid foam insulation.

4. The building of claim 2, wherein the sheathing comprises rigid foam insulation.

5. The building of claim 1, wherein the openings in the air ventilation grid are about 1/16 inch.

6. The building of claim 2, wherein the rigid foam is polystyrene.
7. The building of claim 2, wherein the layer of fibrous insulation comprises glass fiber.
8. The building of claim 1, wherein the wall air gap is about one inch thick.
9. The building of claim 1, wherein the roof air gap is about one inch thick.
10. The building of claim 1, wherein the layer of the thermal wall insulation material is located adjacent the interior wall.
11. The building of claim 1, further comprising a thin moisture barrier membrane between the interior wall and the layer of thermal wall insulation material.
12. The building of claim 1, wherein the air ventilation grid includes an attachment flange that projects from an interior side of the air ventilation grid to facilitate attachment of the air ventilation grid to a building sill plate, and a support flange that projects from an exterior side of the air ventilation grid to support the exterior sheathing.
13. A building comprising:
  - a roof structure including a plurality of rafters, a roof deck attached over the rafters, an interior ceiling below the rafters, a layer of thermal insulation material between the roof deck and the interior ceiling, the layer of thermal insulation being spaced away from the roof deck to provide an air gap between the layer of thermal insulation material and the roof deck;
  - a roof vent that allows air to flow from the roof air gap to outside of the building; and
  - a skylight mounted on and between two rafters, the rafters on which the skylight is mounted being comprised of plastic members having a plurality of openings that allow air to horizontally flow freely from space between the rafters on which the skylight is mounted to adjacent space defined by rafters and through the roof vent to outside of the building.

14. A process for constructing a building comprising:

constructing on a foundation an exterior wall structure including an exterior sheathing, an interior wall, at least one layer of thermal wall insulation material between the exterior sheathing and the interior wall, the layer of thermal wall insulation material being spaced away from the exterior sheathing to provide a wall air gap between the insulation and exterior sheathing;

constructing a roof structure including a roof deck, an interior ceiling, a layer of thermal roof insulation material between the roof deck and the interior ceiling, the layer of thermal roof insulation material being spaced away from the roof deck to provide a roof air gap between the layer of thermal insulation and the roof deck;

the roof structure and wall structure being constructed so that the wall air gap is in fluid communication with the roof air gap;

installing on the roof a vent that allows air to flow freely from the roof air gap to an outside space; and

installing an air ventilation grid at a lower end of the wall air gap, the air ventilation grid having a plurality of openings that are sufficiently small to prevent insects from entering the wall air gap, but sufficiently large to allow the outside air to freely enter into the wall air gap, whereby air is allowed to freely flow by natural convection upward from the outside through the ventilation grid, upwardly through the wall air gap, upwardly along the roof air gap, and out of the roof vent.